DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
P.O. BOX 898
ANCHORAGE, ALASKA 99506-0898

REPLY TO
ATTENTION OF:

February 11, 2000

Programs and Project Management Division
Formerly Used Defense Sites

Mr. Jeff Brownlee
State of Alaska
Dept of Environmental Conservation
Division of Spill Prevention and Response
Contaminated Sites Remediation Program
555 Cordova Street, Second Floor
Anchorage, Alaska 99501-2617

Dear Mr. Brownlee:

Enclosed is the Draft Remedial Action Report for the Padro Dome Formerly Used Defense Site. Please review and provide your comments to me by March 3, 2000.

If you have any further questions, please give me a call at (907) 753-5785.

Sincerely,

Ronald J. Pflum
Project Manager

Enclosure

DRAFT REMEDIAL ACTION REPORT
PCB SOIL EXCAVATION AND TREATMENT
PEDRO DOME, ALASKA

VOLUME I OF II

Prepared for

Department of the Army
U.S. Army Engineer District, Alaska
Fairbanks Resident Office
Post Office Box 356066
Fort Wainwright, Alaska 99703-0066

Linder Construction Inc. Project No. 98-01-02

Contract No.: DACA85-98-D-0015
Delivery Order No. 0002

January 14, 2000

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1.0 LABORATORY ANALYTICAL DATA
(WILL BE INCLUDED WITH FINAL RA REPORT)

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE) retained Linder Construction, Inc. (LCI) to prepare this remedial action (RA) report under Delivery Order No. 0002, with Modifications 201, 202 and 203 to Contract DACA 85-98-D-0015. This project is titled "PCB Contaminated Soil Remediation, Pedro Dome, Alaska." This RA report describes all activities performed to complete this project. Volume I is comprised of the introduction, summary of field investigation/construction, results, significance of findings, conclusions and appendices. Laboratory analytical data packages (hard copy format) are not included with this draft RA report. Laboratory analytical data packages will comprise Volume II of the final RA report.

1.1 Site History and Description

The Pedro Dome Relay Station (RRS) is a Formerly Used Defense (FUD) site, located approximately (18) eighteen miles north of Fairbanks, Alaska. The former Pedro Dome RRS is located on a 30 acre parcel, designated as Tax Lot 200 and owned by AT&T Alascom. Tax Lot 200 is located within (and entirely surrounded by) the northeast section of Tax Lot 100, a 3,265 acre parcel of undeveloped land owned by the State of Alaska. The U.S. Air Force used the site as part of the White Alice Communications System. Ownership of the site was transferred in 1984 to Alascom, who currently maintains a non-resident work force of one to two employees.

In1987, the results of a site inspection indicated soil in the vicinity of a water tank and associated pump hose was contaminated with polychlorinated biphenyls (PCBs) at concentrations up to 59,000 milligrams per kilogram (mg/kg). Further investigation revealed that PCB oil was historically used in the water tank heating system. The location of the contamination and the lack of evidence of any

additional use of PCBs in the area suggest the soil became contaminated when heaters leaked or oil was released during routine changing.

In 1991, approximately 146 cubic yards of contaminated soil was removed from the area around the heaters. Confirmation sampling indicated that soils contaminated with PCBs remained at the site and extended to a sand pad underneath the water tank. In 1993 the water tank and associated pump house were demolished and four hundred cubic yards of PCB contaminated soil was removed from beneath the structures. Confirmation sampling indicated that PCB-contaminated soil with concentrations up to 610 mg/kg remained at the site. Following the 1993 removal action, the excavation pit was lined and back filled with clean imported fill.

In 1996, a remedial investigation was performed at the site to define the extent of the remaining contamination. The investigation determined that approximately 300 cubic yards of soil containing PCBs at concentrations ranging from 10 to 4,100 mg/kg remained in place.

1.2 Scope of Work

The purpose of this task order was to

- Excavate approximately 400 cubic yards of existing clean fill previously placed above contaminated soil (clean and contaminated soils were separated by a liner) was excavated and stockpiled.
- Excavate, transport and dispose of soil impacted by PCBs a concentrations greater than 10 parts per million (ppm).
- Backfill the excavation with clean stockpiled soil and additional imported clean fill.

The intent of this task order was to excavate and dispose of all soil containing PCBs at concentrations greater than

Sampling and testing occurred while excavating the approximate 300 cubic yards of contaminated soil. Proposed sample points and excavation boundaries identified by the USACE during a meeting on January 26, 1999 were surveyed prior to commencement of the project.

The following sections summarize project activities that were completed based on requirements outlined in the delivery order scope of work (SOW) (USACE 1998). A copy of the SOW is included in Appendix A.

1.3 Project Modifications

The following sections describe Cases 201, 202 and 203 to the project.

1.3.1 Case 201

On June 23, 1999, the USACE implemented Case 201, which included the following:

- Stockpile all clean excavated soil on liners next to the excavation to prevent the spread of contamination to clean ground surfaces.
- Sample and test abandoned piping and tiles for asbestos.

1.3.2 Case 202

On July 23, 1999, the USACE implemented Case 202, which included the following:

- Revise turn around time for six (6) PCB samples from 14 days to 48 hours to provide faster results on field screening samples that may indicate additional contamination above the clean up concentration of 10 ppm.
- Delete four (4) samples designated for the "under liner" testing of contaminated stockpile. Use three (3) of the samples to test the "clean" stockpile generated from the soil excavated above the liner.

- Collect one (1) soil sample from the area of "tar-like" staining near sample location 18. Analyze the sample by Alaska Department of Environmental Conservation (ADEC) Method AK 102 for Diesel Range Organics, AK 101 for Gasoline Range Organics, EPA method 5035/8260 for volatile organic compounds using methanol field preservation, and EPA method 8270 for semi-volatile organic compounds. Provide 14-day turnaround on test results.
- Excavate up to 15 cubic yards of contaminated soil from previous sampling locations 13, 16 and 18. At sample location 13, excavate an area of one square foot to a depth of one (1) foot. At sample location 16, excavate down to fractured bedrock. The width of the excavation shall be the midpoint between samples 17 and 15. At sample location 18, excavate the wall an additional 6 inches. Collect one sample from the wall at location 18 and one sample from the floor of the excavation at location 13. Analyze samples for PCB by EPA method 8082. Provide 48-hour turn around on test results.
- Collect and dispose of approximately 10 cubic yards of PCB-contaminated IDW mounds left over from previous investigation work at the site. Collect confirmation samples from three (3) mound areas that are most likely to have PCB contamination. Analyze for PCBs by EPA method 8082. Provide 48-hour turn around on the analysis.
- Scrape approximately 1 inch of surface soils in the work zone area encompassing the mounded IDW into the excavation following confirmation sample results and prior to any other back filling activities.

1.3.3 Case 203

On July 27, 1999, the USACE implemented Case 203, which included the following:

- Clear brush from the pipe and drainage swale east of the original excavation. Brush clearing shall extend from the start of the pipe and drainage swale east of the original excavation to the road embankment for the pipe and to the mid-point between samples 20 and 21.

- Remove asbestos pipe and soil along the length of the pipe to a depth of 3 foot and width of 4 feet. Remove soil from the drainage swale from sample 19 to the mid-point between samples 20 and 21. The swale excavation shall extend to a depth of 3 feet and a width of 10 feet.
- Sample and test the pipe to determine PCB content. Sample and test the excavated soil to determine PCB content of the soil removed and soil left in place.
- Backfill the excavation with clean fill.

1.4 Changed Conditions

The following changed conditions were encountered during the project.

- The existing buried liner separating the clean soil from the contaminated soil was found to be a single layer 6-mil liner and portions above the ground surface appeared to be deteriorating. Upon further investigation, it was discovered that previously excavated test pits on the south, east and west sides (completed by another contractor) penetrated the liner. As a precautionary measure against the possible migration/transport of PCBs from the contaminated to clean soil zones, the SOW was revised to include a liner on which clean soil was stockpiled. The stockpiled soil was covered to prevent possible contamination of the ground surface. Soil samples were collected from the stockpile to confirm the soil was clean.
- During the utility locates, an energized underground electric line was identified in the work zone. The work zone was reconfigured to exclude the power line.
- During the utility locates, an insulated water line coated with mastic was located in the work zone. A mastic sample was analyzed by Northern Testing Laboratory and identified as asbestos containing material (ACM). On August 24, 1999, forty-seven feet of the water line with ACM was removed. The pipe was treated as ACM waste and disposed at the Fairbanks North Star Borough (FNSB) Landfill (see Section 2.11).

- The soil composition contained large rocks and had a much higher density than originally planned. The original weight of the soil was assumed to be 1.5 tons per cubic yard. The actual weight of the soil was 1.93 ton per cubic yard. Because of the increased soil weight of the soil, and angular shape of the large rocks, the Supersacks® (supersacks) were only filled approximately 60% instead of the 75% originally planned. All of these factors resulted in a significant increase in transportation and disposal costs.
- The preliminary sample results from Site 2 indicated soils at the extent of excavation contained PCBs at concentrations exceeding 10 ppm. LCI was directed by the USACE to place a visqueen liner/barrier in the excavation and backfill. Confirmation samples did not contain PCBs at concentrations exceeding 10 ppm.

1.5 Project Planning

The PCB remediation was conducted in accordance with the following USACE approved plans.

- Work Plan (LCI, April 20, 1999)
- Environmental Protection Plan (LCI April 20, 1999)
- Contractor Quality Control Plan (LCI April 20, 1999)
- Site Safety and Health Plan (EHS, Inc. April 20, 1999)
- Asbestos Abatement Plan (EHS, Inc. August 1999)
- Sampling and Analysis Plan (Geo Engineers 4/21/99)
- Quality Assurance Program Plan (Geo Engineers 4/20/99)

Each document was prepared according to USACE technical specifications.

2.0 FIELD INVESTIGATION

The following sections describe field operations conducted during the Pedro Dome PCB Contaminated Soil Remediation project.

2.1 Schedule of Field Program

The project was to be completed in October 1998 based on the original contract. LCI managers were not able to schedule resources and equipment to complete the project in this time frame. The USACE modified the schedule to allow construction to commence in the spring of 1999. The following is a chronology of field program events completed in 1999.

- 5/14/99-Base line survey of site.
- 5/18/99-Arrive at job site and identify standing water at excavation site.
- 5/21/99 Utility locates completed by AT&T Alascom.
- 5/22/99-Pumped 1,500 gallons of water from excavation into 5 fish totes.
- 5/23/99-Demobilize crew from the site due to standing water in the excavation (see section 2.4).
- 6/21/99-Remobilize crew to job site.
- 6/22/99 to 6/23/99-Excavate clean soil from Site 1.
- 6/24/99-Survey clean soil excavation
- 6/24/99 to 7/1/99-Excavate and haul contaminated soil from Site 1.
- 7/1/99-Survey excavation and demobilize from job site.
- 8/23/99-Remobilize to job site and base line survey swale area.
- 8/23/99 to 8/25/99-Treat contaminated water.
- 8/23/99 to 8/26/99-Excavate additional contaminated soil from Sites 1 and 2, and remove investigation derived waste (IDW) piles.
- 8/24/99-Remove 47 feet of pipe with ACM mastic.
- 8/26/99-Survey for final volumes.

- 8/27/99 to 8/28/99-Backfill excavations.
- 8/31/99-Release filtered water on site and demobilize.

Photographs were taken to document construction activities. Appendix B contains the project photographic log (Note: this draft RA report contains black and white photographs. Color photographs will be included in all copies of the final RA report submitted to the USACE). Included with each photo is the date taken, photo location, direction the photograph is facing, description of the photo contents, contract number and photographer.

2.2 Identities and Roles of Subcontractors

The following sections present information on our subcontractors, who were instrumental in completing this project:

2.2.1 Environmental Consultant

Geo Engineers, of Anchorage, Alaska, served as LCI's environmental consultant. Geo Engineers performed all environmental sampling and data management. Geo Engineer's report titled **Chemical Data Interim Report** (CDIR) is presented in Appendix C. This report addresses the following:

1. Project scope and objectives
2. Data quality review procedures, results deviations and corrective actions
3. Sampling methodology
4. Regulatory guidance
5. Description of soil lithology, stratigraphy and excavation procedures,
6. Locations of soil samples
7. Quality assurance/quality control program
8. Field screening and laboratory analytical results

Following receipt of the USACE's chemical data quality review and any additional comments, the CDIR will be revised as a Chemical Data Final Report and included as an Appendix to the final version of this RA report.

2.2.2 Health and Safety Consultant

EHS INC., of Eagle River, Alaska, prepared the Site Safety and Health Plan and Asbestos Abatement Plan. The Asbestos Abatement Close-Out Report is presented in Appendix D. EHS also provided an on-site Industrial Hygienist/Safety Supervisor and Manager and conducted respiratory fit tests on workers at the job site.

2.2.3 Hazardous Waste Management, Transportation and Disposal

Philip Services Corp., (Philip) of Anchorage, Alaska, manifested and transported the PCB-contaminated soil to Envirosafe Services' Landfill in Idaho, for disposal. The transportation log and shipping manifests are presented in Appendix E. Philp is responsible for submitting PCB-contaminated soil disposal certificates, as well as directly to the USACE by Philips.

2.2.4 Surveying

PDC Engineering, Inc., of Fairbanks, Alaska, performed all quantity surveys and prepared a summary of surveyed quantities and final drawings, which are presented in Appendix F (Note, the final RA report will include D-size drawings stamped by a registered professional land surveyor). Preliminary baseline surveys were performed prior to commencement of field activities on May 14, 1999. Quantity surveys of the excavation were performed following removal of the 1) clean soil over the liner, and 2) PCB-contaminated soil.

2.2.5 Analytical Laboratory

Chemical Testing & Engineering Laboratory, of Anchorage, Alaska, performed analytical laboratory services for project and quality control (QC) samples. A total of 47 discrete soil samples were collected for laboratory analysis according

to Environmental Protection Agency (EPA) Method 8082. Geo Engineers managed laboratory analytical data, and results are presented in the CDIR in Appendix C.

2.3 Materials and Equipment

The following materials were used to excavate and contain the PCB contaminated soil at Pedro Dome.

- Ten mil reinforced visqueen
- Raven CB12 ten mil liner
- 30 mil Herculine Containment Liner
- One cubic yard Super Sacks
- Additional clean back fill from King Trucking borrow pit

The following equipment was used to excavate and handle the PCB contaminated soil at Pedro Dome.

- One Cat 320L Excavator
- One Case 9010 Excavator
- One Cat IT-28F Loader
- One Case 621 Loader
- One Cat D3 Dozer
- One Water Truck
- One Ford 1-ton Crew Cab Pickup
- One GMC ¾ ton Pickup
- Tyvek suits
- Full face respirators

2.4 Containment and Treatment of Shallow Groundwater

At the commencement of work in May 1999, groundwater was encountered at 0.5 feet below ground surface. Standing water was observed in several test pits and

low-lying areas within the proposed excavation area. On May 22, 1999, approximately 1,500 gallons of water was pumped from the excavation area and contained in five (5) fish totes (each fish tote had a capacity of 300 gallons). The rate of near surface/shallow groundwater recharge into the excavation area was high and LCI crew could not de-water the excavation. LCI demobilized from the job site on May 23, 1999 and commencement of work was delayed until June 21, 1999, when the standing water subsided. The water was suspected of being contaminated with PCBs and remained containerized in the fish totes and stored on site.

On August 28, 1999, LCI filtered the PCB-contaminated water contained in the fish totes using a CETCO granular activated carbon (GAC) filter. The filtered water was transferred into clean fish totes. The four fish totes that contained the PCB-contaminated water prior to filtering were decontaminated by washing with a detergent solution, steam cleaned and triple rinsed. All decontamination water was passed through the GAC filter. A water sample was collected from each fish tote and analyzed for PCBs according to EPA Method 8082. A wipe sample was collected from one decontaminated fish tote selected at random. Water samples did not contain a PCB isomer at a concentration exceeding the State of Alaska Drinking Water Standard of 0.0005 milligrams per liter (Title 18, Alaska Administrative Code, Chapter 80). PCBs were not detected on the wipe sample. ADEC approved the discharge of the filtered water to the ground surface at the site on August 31, 1999. LCI's letter to the ADEC presenting the water filtering plan, methodology and laboratory analytical results, and the ADEC's approval letter are presented in Appendix G.

2.5 Excavate Uncontaminated Soil

Uncontaminated soil was excavated and handled using a Cat 320L tracked excavator and Case 621 loader (on wheels). Approximately 184 cubic yards of clean soil (soil above the buried liner) was excavated, stockpiled on a new liner

adjacent to the excavation, and covered. Soil samples collected from the stockpile did not contain PCBs at concentrations greater than 10 ppm.

any detections? - where are they?

2.6 Excavate Contaminated Soil

The buried liner separating clean from contaminated soil was exposed, removed and placed in supersacks for disposal. The excavated material from around the liner perimeter was field screened according to the SAP. Soils beneath the liner were excavated and placed in supersacks for diposal.

Two excavations were completed to remove soils impacted by PCBs. The larger excavation is located toward the western portion of the site. The smaller excavation is located toward the eastern portion of the site. The water pipe with ACM mastic coating and swale area were located within the extent of the smaller excavation. In addition, approximately 6.75 cubic yards of PCB-contaminated soil stockpiled on the site by previous contractors was transferred into supersacks and transported offsite for disposal. A site plan showing lateral extent of the excavated areas, sample locations and depths, and the extent of the water pipe and swale areas, is presented as Figure 1 in the CDIR in Appendix C.

Excavation work was performed with field crew in Level B attire. Soil excavation was performed using a Cat 320L or Case 9010 tracked excavator. The soil was excavated to the depth indicated for the specific excavation area, or to bedrock. Loose soil on bedrock was removed to the extent possible using the excavator. The contaminated soil was sampled and then transferred within the filling cell area into one cubic yard supersacks. The supersacks were then conveyed to the contaminated soil bag containment cell and stockpiled. This method prevented spreading of the contaminated soils. Upon completion of soil excavation activities the confirmation samples were collected and a final site survey was performed.

Approximately 152 cubic yards of PCB-contaminated soil were removed from this west excavation area. Approximately 34 cubic yards of PCB-contaminated soil were removed from the east excavation area. LCI was directed by the USACE to contain and dispose of IDW piles previously left at the site by other contractors. The surveyed volume of the IDW piles was 6.75 cubic yards.

Wipe samples were collected from the inside and outside of piping exposed in the eastern excavation area.

The CDIR (Appendix C) includes detailed descriptions of the excavations, including soil conditions, type, stratigraphy, extent of impacted soil, and locations of field-screening and laboratory samples.

2.7 Field Screening and Sampling

Field screening and fixed laboratory sample methodology; sample labeling, handling and shipment; laboratory analytical methods and procedures; quality assurance/quality control samples; and deficiencies and corrective actions are addressed in the CDIR in Appendix C.

2.8 Decontamination

After all the contaminated soil was excavated and removed, LCI equipment was moved to a lined containment area and decontaminated. All excess soil was scraped and broom swept from the equipment. The soil was loaded into supersacks, which were staged in the contaminated soil containment cell until transported by Philip. All equipment and hand tools were decontaminated with Liquinox detergent solution before being used for back filling operations.

All workers leaving the excavation area entered the personnel decontamination cell. The workers washed down with water prior to removing tyvek suits. Water used for equipment decontamination was also contained in the decontamination cell. The cell was constructed of a Raven CB12 (10) ten mil bottom liner and a

top cover required for dust and rain control. Philip Services Corp. drummed and disposed of approximately 20 gallons of decontamination water.

2.9 Backfill Excavation

Confirmation samples were collected from the excavations according to the procedures presented in the SAP. Upon receipt of confirmation sample results and directive from the USACE, the excavations were back filled with clean soil. The temporary stockpile of clean soil was used to backfill the excavation areas. In addition, approximately 408 cubic yards of additional clean fill (USACE approved borrow source) was imported by King Trucking, of Fairbanks, Alaska, to bring the excavations to final grade. All backfill placed in the excavations was free of roots and other organic matter, trash and other debris, ice and other frozen materials. Backfilling was completed with a wheeled loader and Cat D3 dozer. The back fill was placed in 24-inch lifts and compacted by five passes of the loader. Compacted back fill was mounded a minimum of 12 inches above existing grade.

2.10 Transport and Disposal of Contaminated Soil

Philip Services personnel collected samples from each supersack, and developed and provided all manifesting and other paper work necessary for transporting the contaminated soil for disposal.

The following summarizes the sequence of events to transport and dispose of the PCB-contaminated soil:

1) Following receipt of sample analytical results, supersacks were transported from the site to the Alaska Railroad Corp. (ARRC) yard in Fairbanks.
2) The ARRC transferred the supersacks to gondola-type railcars, which were transported from Fairbanks to Whittier, Alaska.
3) Crowley Marine Services transported the railcars by barge from Whittier to the Port of Seattle, Washington.

4) Union Pacific Railroad Co. transported the railcars from Seattle to Simco, Idaho.
5) Envirosafe Services of Idaho trucked the supersacks from Simco to their Toxic Substances Control Act permitted landfill in near by Grandview, Idaho.

The decontamination water was transported along with the contaminated soil to the Port of Seattle, Washington. The water was then transported via truck from the Port of Seattle to the Burlington Environmental's Georgetown Facility, Seattle, Washington, for disposal.

All shipping manifests are presented in Appendix E. Soil disposal certificates will be submitted directly to the USACE Fairbanks Resident Office.

2.11 Transport and Disposal of Water Line with ACM Mastic

During the utility locates, an insulated water line coated with mastic was located in the work zone. A mastic sample was analyzed by Northern Testing Laboratory and identified as asbestos containing material (ACM). On August 24, 1999, forty-seven feet of the water line with ACM was removed. The pipe was treated as ACM waste and disposed at the FNSB Landfill. The ACM waste shipment manifest and disposal receipts from the FNSB Landfill are presented in Appendix H.

2.12 Documentation

DQCRs were completed by LCI's Contractor Quality Control Representative and submitted to the USACE Quality Assurance Representative (QAR). Copies of DQCRs and field notes are included in Appendix I.

LCI's CQC representative and site safety officer gave all people that entered the site a verbal overview-safety briefing. Throughout the duration of the project LCI's safety officer maintained a site control log. All persons visiting the site were briefed, required to read the site safety and health plan, and sign the log site

control log. The site control log contains the visitor's name, agency/business, date and time of visit. The Site Control Log and Personal Acknowledgment Forms are presented in Appendix J.

2.13 Safety and Health Phase-Out

There were no accidents, lost time injuries or illnesses associated with this delivery order. No accident reports were completed during this project.

On June 25, 1999, an exposure assessment was conducted by EHS to assess LCI crew exposure to PCBs. Exposure samples did not contain detectable concentrations of PCBs. Thus, the monitored exposures were less than the U.S. Occupational Safety and Health Administration's and the Alaska Department of Labor's permissible exposure limits for PCB's. EHS concluded that LCI personnel could discontinue wearing full-face respirators and down grade their personal protective equipment to Level D attire, if so desired. A summary of the exposure assessment air monitoring results is presented in Appendix K.

2.14 Deficiencies

The project was to be completed in October 1998 based on the original contract. LCI managers were not able to schedule resources and equipment to complete the project in this time frame. The USACE modified the schedule to allow construction to commence in the spring of 1999.

At the commencement of work in May 1999, groundwater was encountered at 0.5 feet below the ground surface and standing water was observed in several test pits and low-lying areas within the proposed excavation area. On May 22, 1999, approximately 1,500 gallons of water was pumped from the excavation area and contained in five (5) fish totes (each fish tote had a capacity of 300 gallons). The rate of near surface/shallow groundwater recharge was high and the excavation area could not be dewatered. LCI demobilized from the job site on May 23, 1999 and commencement of work was delayed until June 21, 1999, when the water

subsided. Water contained in the fish totes was filtered, sampled and properly disposed under approval from Alaska Department of Environmental Conservation, and at no additional expense to the USACE.

2.15 Community Relations

Pedro Dome RRS is a FUD site, located approximately (18) eighteen miles north of Fairbanks, Alaska. The location and vicinity of the project are shown on Figure 1. There is essentially little community in the vicinity of the project site. Throughout the duration of the project, LCI crew did not observe community interest or involvement.

Same figure as in Appendix C —
no site map —

3.0 RESULTS

The objective of the analytical program was to assess the nature and extent of PCBs remaining in soils at the site following excavation activities. The intent of the sampling was to verify that soil containing PCBs at concentrations greater than the site cleanup level of 10 ppm were excavated and removed for disposal (Alaska Department of Environmental Conservation Method 2 Guidance). Additional samples were collected from each supersack to generate waste profile data required for transportation and disposal. A detailed summary of the project analytical results is presented in the CDIR in Appendix C.

3.1 Chemical Quality Assurance Report Results

Analytical data from both the project and QA laboratories are within acceptable criteria and valid, with exceptions noted in the CDIR in Appendix C. Laboratory reports are presented in Volume II of this report.

The USACE is completing an independent data quality review, the findings of which will be summarized in a Chemical Quality Assurance Report (CQAR). The CQAR is not included in this draft RA report. A copy of the CQAR will be included in the final version of this RA Report. If necessary, the final RA report will be revised to reflect the findings of the CQAR.

3.2 Confirmation Sample Results

Approximately 193 cubic yards of soil containing PCBs at concentrations greater than 10 ppm was excavated and removed from the site. Locations of confirmatory soil samples collected within the excavations are shown on Figure 1 of the CDIR in Appendix C. Analytical results are presented in Tables 1 of the CDIF. Field screening and laboratory analytical results indicate that excavation activities in this area removed all soil containing PCBs at concentrations exceeding the site cleanup concentration.

Confirmation sample PDS99SS16, collected in the west (larger) excavation, contained PCBs at a concentration of 78.3 ppm. No other subsurface soil confirmation samples in the west or east excavations contained PCBs at concentrations exceeding the site cleanup level.

Surface soil sample PDS99SL13, collected from the undisturbed ground surface between the excavation areas, contained PCBs at a concentration of 12.2 ppm. Swale area surface soil samples PDS99SL19 and PDS99SL20 contained PCBs at concentrations of 62.9 and 19.1 ppm, respectively. No other confirmation surface soil samples contained PCBs at concentrations exceeding the site cleanup level.

Wipe samples collected from the inside and outside of excavated pipes did not contain PCBs at concentrations above 10 ppm.

A surface soil sample collected in the "stained area" contained diesel-range organics at a concentration of 13.2 milligrams per kilogram, while gasoline-range organics, volatile organics and semi-volatile organics were not detected.

3.3 Composite Samples of Soil Scheduled for Disposal

Composite samples of soil scheduled for disposal contained PCBs at concentrations ranging from 17.3 to 269 ppm. Composite samples of soil from the swale and pipe areas contained PCBs at concentrations below the site cleanup level.

3.4 Shallow Groundwater Sample and Fish Tote Wipe Sample Results

Confirmation samples of the shallow groundwater contained in the fish totes did not contain concentrations of PCBs above 5 micrograms per liter. Following review of confirmation sample results the groundwater was discharged to the site upon approval from the ADEC and USACE. Wipe samples collected from the

fish totes did not contain detectable concentrations of PCBs. Treated (filtered) groundwater and wipe sample results are presented in Appendix G.

4.0 SIGNIFICANCE OF FINDINGS AND RECOMMENDATIONS

The aerial extent of the excavations is shown on Figure 1 in the CDIR in Appendix C. A summary of results for composite samples collected from the supersacks of soil prior to disposal is presented in Table 1 in the CDIR in Appendix C.

Field screening and laboratory analytical results suggest that some soils remaining in the west excavation (in the vicinity of sample PDS99SS16) contain PCBs at concentrations above the site cleanup level. Confirmation samples results also suggest that some soils remaining in the east excavation (in the vicinity of samples PDS99SL19 and SL20) contain PCBs at concentrations above the site cleanup level. Surface soil sample PDS99SL13, located between the two excavation areas, contained PCBs at a concentration of 12.2 ppm.

The large majority of PCB-contaminated soils were excavated, contained and transported from the site for disposal. However, some areas of PCB contamination remain. LCI recommends inclusion of this site in future investigations to address possible human health risks.

5.0 REFERENCES

ADEC. 1999. Oil and other Hazardous Substances Pollution Control, Title 18, Alaska Administrative Code 75, as amended through January 22.

EHS-Alaska Inc. 1999. Safety and Health Plan, PCB Soil Excavation and Disposal, Pedro Dome, Alaska. April.

EHS-Alaska Inc. 1999. Asbestos Abatement Plan, PCB Excavation and Disposal, Pedro Dome, Alaska. August.

Geo Engineers. 1999. Environmental Sampling and Analysis Plan, PCB Soil Excavation and Disposal, Pedro Dome, Alaska. April.

Geo Engineers. 1999. Quality Assurance Program Plan, PCB Soil Excavation and Disposal, Pedro Dome, Alaska. April.

LCI. 1999. Work Plan, PCB Soil Excavation and Disposal, Pedro Dome, Alaska. April 20.

LCI. 1999. Environmental Protection Plan, PCB Soil Excavation and Disposal, Pedro Dome, Alaska. April.

LCI. 1999. Contractor Quality Control Plan, PCB Soil Excavation and Disposal, Pedro Dome, Alaska. April.

SLAB

SE CORNER OF SLAB
N1000.0, E1000.0

℄ ROAD

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PDS99SS18 (6ft)
PDS99SS18R (6ft)
PDS99SS22 (6ft)
PDS99SS17 (3ft)
PDS99SS16 (3ft)
PDS99SS15 (3ft)
PDS99SS1 (3ft)
PDS99SS2 (3ft)
PDS99SS3 (3ft)
PDS99SS4 (3ft)
PDS99SS5 (3ft)
PDS99SS6 (6ft)
PDS99SS7 (3ft)
PDS99SS12
IDW-TP14R (0.5ft)
IDW-TP30R (0.5ft)
IDW-TP33R (0.5ft)
PDS99SL8
PDS99SL9
PDS99SL10
PDS99SL11
PDS99SL13
PDS99SL13R (0.5ft)
PDS99SL14

PIPE AREA

PDS99SS28 (3ft)
PDS99SS25 (3ft)
PDS99SS27 (3ft)
PDS99SS26 (3ft)
PDS99SL19
PDS99SL20
PDS99SL21
PDS99SS24 (3ft)
PDS99SS23 (3ft)

SWALE AREA

℄ ROAD

0 12 24
APPROXIMATE SCALE IN FEET

EXPLANATION:

- CLEAN FILL ABOVE LINER
- SHALLOW EXCAVATION TO 2-3 FT
- EXCAVATION TO BEDROCK
- SAMPLING POINTS
- PDS99SL14 SURFACE SAMPLE
- PDS99SS12 SUBSURFACE SAMPLE (SAMPLE DEPTH)

NOTES:

1. OUTLINE OF OLD EXCAVATION IS BASED ON 8/5/96 SURVEY BY PDC CONSULTING ENGINEERS.
2. EXCAVATION PLAN PROVIDED BY ALASKA DISTRICT, CORPS OF ENGINEERS.

PEDRO DOME SITE PLAN 037105500:020999

HPT:INT

GeoEngineers

PEDRO DOME RADIO RELAY STATION
EXTENT OF SITE EXCAVATION

FIGURE 1